

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 October 2004 (28.10.2004)

PCT

(10) International Publication Number
WO 2004/092396 A3

(51) International Patent Classification⁷: **C12N 15/00**,
15/09, 15/63, 15/70, 15/74, C07H 21/02, 21/04

(21) International Application Number:
PCT/US2004/011622

(22) International Filing Date: 15 April 2004 (15.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/463,148 15 April 2003 (15.04.2003) US

(71) Applicants (for all designated States except US): **NO-VARTIS AG** [CH/CH]; Lichtstrasse 35, CH-4056 Basel (CH). **IRM LLC**; Sofia House, 48 Church Street, Hamilton (BM).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HALLENBECK, Paul** [US/US]; 4371 Regalwood Terrace, Burtonsville, MD 20866 (US). **HAMPTON, Garret** [IE/US]; 5659 Arbor Grove Court, San Diego, CA 92121 (US). **HAY, Carl** [US/US]; 28301 Honeysuckle Drive, Damascus, MD 20872 (US). **HUANG, Ying** [CA/US]; 5030 Tothill Drive, Oleny, MD 20832 (US). **JAKUBCZAK, John** [US/US]; 12926 Summit Ridge Terrace, Germantown, MD 20874 (US). **PHIPPS, Sandra** [US/US]; 2319 Rosedown Drive, Reston, VA 20191 (US).

(74) Agent: **SHERWOOD, Pamela, J.**; Bozicevic, Field & Francis LLP, 1900 University Avenue, Suite 200, East Palo Alto, CA 94303 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
17 February 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: FLAP ENDONUCLEASE 1 (FEN1) REGULATORY SEQUENCES AND USES THEREOF

(57) Abstract: *FEN1* transcriptional regulatory sequences (TREs) are provided. *FEN1* TREs provide for transcriptional regulation dependent upon transcription factors that are only active in cancer cells. The *FEN1* TREs may be used as a vehicle for introducing new genetic capability, particularly associated with cytotoxicity, for selective expression in cancer cells.

WO 2004/092396 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/11622

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12N 15/00, 15/09, 15/63, 15/70, 15/74; C07H 21/02, 21/04
US CL : 435/320.1; 536/23.1

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 435/320.1; 536/23.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/0168771 A1 (GAMERMAN) 14 November 2002 (14.11.02), see whole document especially pages 1 and 8-11.	1, 2, 5, 6
X	US 5,874,283 (HARRINGTON et al) 23 February 1999 (23.02.1999), see whole document especially columns 9, 22, 29.	1, 2, 3, 5

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

25 October 2004 (25.10.2004)

Date of mailing of the international search report

07 JAN 2005

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Brian Whiteman

Telephone No. (703) 308-0196

Jean Proctor
Paralegal Sign. et. No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/11622

Continuation of B. FIELDS SEARCHED Item 3:

WEST 2.1, STN

search terms: FEN1, TRE, transcriptional response element, transcriptional regulatory element, adenovirus, TERT, E2F, PRL-3, IRES, ADP, flap

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/11622

Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

a. type of material

☒

a sequence listing

☐

table(s) related to the sequence listing

b. format of material

☒

in written format

☒

in computer readable form

c. time of filing/furnishing

☒

contained in the international application as filed

☒

filed together with the international application in computer readable form

☐

furnished subsequently to this Authority for the purposes of search

2. ☒

In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments: